Report on the Minnesota IT Master Plan

Biennial report to the State Legislature
January 15, 2015

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Background

Report to the Legislature

This report is in keeping with the legislative mandate to provide an update on the State's IT Master Plan at the beginning of each regular session: "[The state CIO shall] Design a master plan for IT systems and services in the state and its political subdivisions and shall report on the plan to the governor and legislature at the beginning of each regular session."

This report has been prepared by the office of the State CIO.

History

The current State of Minnesota IT Master Plan was written in 2012, six months after the consolidation of all executive branch IT in compliance with 2011 statute. The plan was written with a five-year horizon, meaning that it will be revisited and refreshed by the State CIO in 2017.

Like its predecessors, the 2012 Master Plan focuses on information technology strategies for the executive branch and was developed through an input process that included state agency leadership, state IT leadership, state IT employees and a scanning of master plans from other states and organizations.

The goal of the plan was to articulate the way in which information technology can serve the goals and objectives of state government and thus, set the priorities for how state IT is managed.

Information Technology: Serving Government

Information technology in government – or any organization or industry - does not exist for its own sake. It exists to enable and improve the functioning of government and to facilitate government's responsibility to serve the people of the state. It is the invisible layer of functionality that makes government work and information flow.

Good IT comes from healthy partnerships between those that manage the business of government, the IT professionals that offer effective solutions, and the "consumers" of government - the state's citizens, businesses and visitors, everyone that interacts with government at many levels every single day.

When IT is strategically conceived and effectively managed, government becomes more agile and service-oriented, daily state business is optimized, and the State can provide clear and effective leadership to the people of Minnesota, particularly in times of crisis and change.

For citizens, information technology well managed enables them to go about their lives minimally distracted by a complicated bureaucracy. They are able to get the services they need when and where they need them. By streamlining fundamental "back office" IT services, the State can dedicate more of its know-how and resources into the dynamic, mobile, interactive, and responsive government that can improve the lives of every Minnesotan. *IT has the ability to change government, not just to make it more efficient.*

The Master Plan articulates this vision and can be used by state leadership to set goals and priorities for IT investment.

Themes of 2012 IT Master Plan

The State of Minnesota IT Master Plan outlines the objectives for IT in business terms – what state government leadership wants technology to accomplish on their behalf, i.e., the business drivers for information technology. They are as follows:

- Improve the state's business climate and quality of life through better government service
- Simplify the end user's experience with government
- Foster interactive democracy
- Promote "smart government"
- Facilitate government reform
- Make the State of Minnesota an employer of choice
- Ensure that government and citizen data is protected and the business of government never stops

The Approach

Decisions about what technology solutions will best serve the State's priorities is a business decision – legislators, the governor and agency leadership must define the need for collecting, storing, processing and disseminating information and fund their information technology priorities accordingly.

Decisions about *how* that technology is best delivered within the context of prudent architecture, security and functionality, is the purview of IT leadership and driven by the State CIO.

In delivering IT services, the State of Minnesota's IT organization - MN.IT Services - has an overall approach:

1. Avoid redundancy and inefficiencies for those IT services that are alike across the executive branch by consolidating core functions that bring consistency to the environment. These are primarily the back-office infrastructure services less visible to state government programs, but provide the underlying platform for everything, collectively, that we do.

2. Maintain a close-to-business approach for management of the over 2,000 applications that are unique to individual agencies and programs.

This approach has been made possible through the legislatively mandated consolidation of all IT into a single organization in 2011. The new enterprise-wide organization has focused its first three years of operation on the mechanics of combining staff and finances and building a new operational structure while maintaining current IT services without interruption. The organization now has a multi-year plan to apply the above approach to the State's service delivery model going forward.

Key IT Activities and Metrics 2012 - 2014

What follows is a partial list of the activity and measurement of success between 2012 and 2014 for the strategies outlined in the State of Minnesota IT Master Plan. They do not represent the State's total IT activity, nor do they chronicle all the important efficiencies MN.IT has realized, but they illustrate and represent accomplishments that relate specifically to the goals and direction of the plan and the priorities of state government programs.

Strategy 1: Self-serve Government

The State of Minnesota continues to increase the number of web-based, self-service applications available to help citizens and businesses transact business with the State.

- The Center for Digital Government's gave the State a B+ in its 2014 survey of state electronic government capabilities. According to the survey, "a grade of B reflects states that are trending up. They show results in many survey categories, and their leaders use modernization to change entrenched practices to prepare for more sustainable operations. Incentives for collaboration are in place, and performance measures are used in key areas."

- Many states' citizen self-service strategy focuses first and foremost on a state portal that has embedded within it self-service features for citizens. Without a dedicated budget, Minnesota has lagged behind in portal capabilities. Headway was made in 2013 when the legislature gave MN.IT the authority to "self-fund" its portal through fees.

- The Department of Natural Resources now provides online registration renewal for recreation vehicles (e.g. snowmobile, ATV, boat) via its Electronic Licensing System (ELS), including Vehicle Titling and Lien Processing.

- The Department of Natural Resources has an active array of social media and mobile applications. The DNR public website saw nearly 14.5 million sessions in 2013, up 15% from 2012 and 40% from 2011. Mobile devices (including tablets) accounted for nearly 1/3 of website visits in 2013, up 203% from 2011. Use of the Internet for booking camping and lodging reservations has grown from just 28% in 2002 to 86% presently. Mobile applications include: Mobile Hunting/Fishing License Sales; a user-friendly, easily accessible version of 2014 Minnesota Fishing Regulations; The Mobile Recreation Compass, a mobile-optimized website that allows users to explore recreation opportunities across the state; State Park and Trails Virtual Tours.

- The Minnesota Air App provides air quality forecasts and real-time air quality conditions to help citizens plan activities and protect their health, with conditions updated hourly.

- The Department of Revenue's Integrated Tax System, now browser-based, assists with IRS compliance, provides enhanced online e-services, improved user interface design, additional financial management, security and quality controls, expanded reports, and remote/mobile device access. Online services related to tax filing and payments include free online filing services for homeowner's property tax refund, individual consumer use return, gift tax return, auto theft refund, mortgage registry, and deed return and payment.

- The Minnesota Public Utilities Commission implemented software solutions to manage their public meeting calendars and agenda, and to make the meeting documents, video recordings, and minutes more useful to citizens and regulated entities.

- The Department of Natural Resources completed the first phase of a multi-year effort to transform its environmental water permits to e-services. MPARS was developed to streamline the application process and allow the collection of monitoring information and permit fees online. On

average, permits are now issued or denied a month faster than under the old process. MPARS will save an anticipated $255,000 and 5,000 staff hours annually.

- The Department of Employment and Economic Development released in 2013 the "Made in Minnesota" directory. The directory is a free, online database of products and supplies made in Minnesota.

- When flooding strikes, innovative web services provide MnDOT, the State Emergency Operations Center and other agency partners timely and accurate road closure information in an easy-to-understand visual format. The web services and interactive mapping application are also used by partnering systems at local, state, and federal levels, emergency responders and/or travelling members of the public.

- The Pollution Control Agency (PCA) "What's in My Neighborhood" tool allows users to search for information about remediation projects and landfills around Minnesota, using a map or text-based search. The tool was recently expanded to include info on air quality, hazardous waste, remediation, solid waste, tanks and leaks, and water quality. This increases the number of sites to nearly 150,000.

- The MN Department of Transportation's (MnDOT) MnPASS website allows citizens to create and manage MnPASS accounts, allowing for electronic fee-based use of express lanes on Minnesota highways.

- The Minnesota traveling public can access current road conditions, emergency closures and incident information through MnDOT's 511 mobile app.

- MnDOT also provides online permitting for the commercial freight industry to obtain over-the-road permits for oversized loads.

- The Minnesota Board on Aging developed the Live Well at Home app, allowing older adults and caregivers to conduct an at-home assessment to identify steps to live well at home longer.

Strategy 2: Carrying out statutory obligations through effective tools

- eCharging is a Department of Public Safety (DPS) tool to electronically prepare and transmit incident and charging documents from law enforcement, prosecution and courts. As of July 2014, 66 out of 87 counties are collaborating and submitting criminal complaints and approximately 90% of DWIs are being processed electronically. The time taken to process DWI forms has been reduced from approximately 75 minutes to less than 17 minutes and errors have been reduced to 0%.

- The Department of Corrections updated the Offender Identity and Sentence Administration system, increasing the accuracy of offender information, simplifying sentence administration and significantly improving system security. The Corrections Access and Tracking System provides a sustainable, scalable, more secure solution to control access and track staff and contractors in Minnesota prisons.

- Modernization of the Department of Agriculture's Licensing Information system is approximately 80% complete. This effort will improve performance, stability and features for MDA inspectors and their management.

- As of Jan. 2014, the Minnesota Department of Labor and Industry (DLI) mandated the electronic submission of First Report of Injury (FROI) data via a web portal avoiding the cost of mailing and paper-processing documents and requiring fewer people to monitor and administer the EDI system.

- MnCHOICES, developed by the Department of Human Services, is a mobile application assessment and planning tool for people who need long-term services and support. The tool is used in the field by a social worker or health care professional. The tool also allows for statewide measurement of quality assurance indicators. When fully implemented, it will ultimately be used by roughly 3500 assessors statewide to perform 800 assessments per day.

- The Minnesota Department of Human Services is participating with the federal Centers for Medicaid and Medicare Services in a CMS Provider Screening Challenge project that will provide functionality to screen and enroll providers and revalidate existing providers to determine if the provider should become or remain a Medicaid/CHIP provider.

- The Minnesota Department of Human Services, in coordination with the Minnesota Office of Early Learning, created Parent Aware, a free online rating tool for selecting high-quality child care and early education providers.

Strategy 3: Enhanced two-way communications channels and online publishing

- The Administration's "Plain Language" initiative has challenged agencies to review websites, forms, documents and print materials for government jargon that gets in the way of clear communications.

- The Department of Natural Resources utilizes GovDelivery service (electronic newsletter distribution) to reach 220,000+ subscribers on 90+ lists, up from approximately 50,000 subscribers on 60 lists in 2012.

- The Division of Emergency Communication Networks (ECN), part of DPS, has 84 of 87 counties participating on a statewide, 324-site, shared radio network for first responders in partnership with counties, cities and other state agencies.

- The MN Department of Transportation's (MnDOT) Regional Transportation Management Center's (RTMC) traffic management systems help to optimize the use of available freeway capacity utilizing closed-circuit TV (CCTV), Traffic Radio, Traffic TV, various Internet sites and a telephone service. Travelers are also alerted to traffic problems via electronic message signs placed throughout the freeway system.

- The RTMC uses Intelligent Transportation Systems (ITS) that provide in-cab support, including current weathers conditions, forecasted weather events and recommendations for road treatment. Automated Vehicle Location (AVL) systems continuously record plow truck locations and other information.

- Social media helps MnDOT reach audiences unavailable through traditional media. For example, after a weekend of major road closures in the Twin Cities, MnDOT can tell how well they did in communicating the closures and how much inconvenience was caused by tracking traffic on social media through social media tracking tools. In recent flooding emergencies, MnDOT cross-posted the latest road emergency information via their website, Facebook and Twitter, often faster than the media can distribute the information.

- The Department of Natural Resources (DNR) uses social media channels such as YouTube as a platform for publishing videos/live events, as well as two-way communications such as Facebook, Twitter and Google+. More than 40,000 customers interact directly with the agency though these channels. Use of tools like Facebook has become more coordinated with other available channels.

- At the Department of Human Services, the Long Term Care program is using Facebook to reach citizens, Twitter to distribute general DHS information and job postings, LinkedIn to recruit new

employees, and YouTube to highlight various Human Services-related topics, including drug abuse awareness, gambling addiction, and use of therapy dogs.

- During a recent shortage of heating fuel, the State Emergency Operations Center at DPS and the Commerce Department collaborated to staff a Propane Emergency Call Center using enhanced Voice over Internet Protocol (VoIP) technology. The SEOC was also supported by remote access to a database for logging citizen calls and to other digital resources for directing callers to local assistance.

Strategy 4: Readily available data and results-oriented measurements

- Minnesota Management and Budget's online Minnesota Dashboard provides an on-going report card for Minnesota citizens – as well as a framework of important outcome goals and measures for state policymakers, providing a starting point to measure trends, changes and status in eight key policy areas.

- The Department of Education's Mobile Report Card allows parents, teachers and policymakers to effortlessly view and analyze education performance data, enabling users to access assessment, accountability, enrollment, graduation and staffing data for public schools, public charter schools and districts.

- The Graduation Employment Outcomes Tool, a collaboration between DEED and the Minnesota Office of Higher Education (OHE), uses unemployment insurance data and data on post-secondary program graduates to paint a picture of where the jobs are after college, and what fields of study provide strong employment and earning potential.

- Workforce One (WF1) is a web-based client management application used by 2,000 state, city, county, and non-profit employees to track employment and training services to more than 100,000 customers across Minnesota's Workforce Center network. The new case management system includes streamlined navigation, robust reporting, extensive online help, connections to other systems, and other efficiencies to allow counselors to better serve their customers.

- The Minnesota Statewide Longitudinal Education Data System (SLEDS), matches student data from pre-kindergarten through completion of postsecondary education and into the workforce. By bridging existing data with other incoming data, a range of programmatic and delivery questions can be answered to gauge the effectiveness of current education programs and design targeted improvement strategies to help students. The new SLEDS site was created using Mobile First Analytics standards, making the site user friendly on all mobile devices and accessible to all.

- Minnesota provides access to specific data points and summary and analytic information through the Minnesota Management and Budget website. Direct access to data enables citizens to see information on payments to vendors, professional/technical contract payments, budget information (general fund balance, consolidated fund statements, spending since 1960, funding pie charts, and "price of government" information), state employee information and compensation, agency staffing levels, economic updates and budget forecasts, capital bonding information, information on projects, FAQs and other information useful for citizens to navigate state government.

- The Department of Natural Resources (DNR) Grant Outcomes website provides detailed information about DNR grant expenditures and can be searched by program, project or county.

Strategy 5: Next generation web tools

- The State has standardized on three web content management tools for the executive branch that provide options for agency websites based on their content and interactive complexity. 57 websites in 40 state agencies are now using the standard Tridion tool with 18 more in queue.

- MN.IT Services has licensed an interactive "ideation" tool that allows agencies to engage in interactive discussion and the collection of ideas. The tool was used by Governor Dayton to solicit ideas from both citizens and state employees for the 2014 legislative "Unsession". Over 1,200 ideas and 2,600 related comments were provided by citizens for consideration during the "Unsession."

Strategy 6: Technologies that enable collaboration among government entities

- By partnering with the State's multi-agency emergency management group, MnDOT is now able to share real-time flood information to inform emergency management efforts and protect the travelling public.

- The Greater MN Tele-health/e-Health Broadband Initiative (GMTBI), an FCC Rural Health Care Pilot Project, constructed a broadband network to support health information exchange and tele-health for rural providers, with support from the Department of Health and MN.IT. This successful pilot resulted in an ongoing program to support rural networks, improving access to care for rural patients, supporting tele-health videoconferencing technology, and keeping patients and revenue in rural communities.

- MN.IT established in late 2013 a new SOHO (small office/home office) service that allows state and local governmental entities to connect small office networks to MNET by utilizing secure VPN technologies, allowing for centralized management of small office network infrastructures. MN.IT has installed the new service for 30 government agencies/entities, resulting in significant savings. One local police department's connectivity costs were reduced from $1300 per month to $300 per month, realizing a 77% reduction in cost without any reduction in performance or security.

- Launched in 2014, the [Minnesota Geospatial Commons](#) website is an enterprise-wide clearinghouse for GIS data, applications and services. Designed and developed by a multi-agency team from the DNR, Pollution Control Agency, and MNGEO, the Minnesota Geospatial Commons is a collaborative public website where publishers can share geospatial data and users can access data, metadata, maps, services and applications. This site will be available to the public for individuals and organizations with interests in geographic information systems (GIS) data, spatial data services, applications, maps and knowledge.

- [MPARS](#) - The DNR's new water permitting application - was developed in coordination with other government organizations, local, state and federal.

Strategy 7: Enable data-driven decision-making

- The Department of Administration is leading a cross-agency effort to define data governance standards and processes for the executive branch.

- Minnesota is expanding its Budget Planning & Analysis System (BPAS) for collection of the Governor's Capital Budget. The BPAS module is integrated with the financials module, receiving baseline information to establish the proposed budget for the next biennium.

- Minnesota Management and Budget is replacing Minnesota's statewide system supporting finance, administration, and procurement functions. Known as SWIFT ([Statewide Integrated Financial Tools](#)-) the system integrates all of the administrative functions across state agencies,

including financial, procurement, reporting and the current SEMA4 (human resources/payroll) system. As a result:

- o Payroll is 99%+ direct deposit
- o Payroll time entry and labor distribution is completed online using self-service for approximately 93% of all state employees
- o Labor distribution is fully integrated with financials
- o Manager approvals are also completed on-line
- o Benefits open enrollment is completed on-line by all employees
- o W-2's are available on-line, reducing mailings by 90%
- o Business expense submissions and manager approvals are available online.

Strategy 8: Enable anytime, anywhere" workforce

- A rich instant messaging and video tool (Lync) has been deployed to all state agencies in the past two years as part of the cloud-based suite of productivity tools and is available to all state employees at their desks. Microsoft Lync (instant messaging, video chat, desktop sharing) has seen growth from roughly 3,000 active users in June of 2012 to roughly 14,000 active users in June 2014. The number of monthly Lync conversations statewide has increased from roughly 25,000 in June 2012 to 376,000 in June 2014, increasing by a factor of 15 in just two years, saving the State in both travel time and meeting expense.

Strategy 9: Training tools for state workforce

- Minnesota fully implemented an Enterprise Learning Management (ELM) system in 2014 and is in the process of migrating agency-based training management systems to this online/anytime tool. The ELM module replaces disparate aging training management systems throughout state government with a single system.

Strategy 10: Back-office technology and modernization

- The Department of Human Services is undertaking a massive "modernization" program to overhaul and modernize the complex system that connects agency services with counties, cities and quasi-government organizations that serve the same population, allowing better data sharing and collaboration. DHS plans to modernize most of the major IT systems that support the administration and delivery of DHS services. Such statewide systems are critical to DHS, counties and tribes in their administration of human service programs.

- The State of Minnesota's data center consolidation initiative seeks to reduce the State's overall data center footprint from a previous total of 43 data centers/computer rooms in 2011 to no more than four enterprise data centers. Thus far, nine data centers have been fully consolidated through the initiative into these highly secure and redundant Tier II/III shared facilities. Two additional data centers have been reduced in square footage by 50% and 80%, respectively, and an additional data center is in the process of being consolidated. Planning for decommissioning the remaining data centers is underway. Virtualization efforts have also allowed a reduction in the hosting footprint for these newly-established enterprise data centers from 29,000 to 14,000 square feet, a 51% reduction, with 85% of executive branch agency servers now virtualized.

Strategy 11: Managing and prioritizing IT investments

- Resulting from a bipartisan effort during the 2011 legislative session, all powers, duties, responsibilities and personnel related to IT functions were transferred to MN.IT Services. Roughly 1800 state IT employees were formally transferred from various state agencies to MN.IT over the

course of 2012, with the goal of having a single accountable entity for the governor and legislature for "all things IT," and consistent policy and operations. Over 70 service level agreements were created to define services and service levels for agency customers, and set expectations for the new business-IT partnerships in Minnesota's executive branch.

- In late 2012, Minnesota was able to, for the first time calculate the full cost of IT for the State's executive branch, totaling roughly $900 million for the FY2014-2015 biennium. This work serves as a benchmark against which future efficiency efforts will be measured.

- MN.IT assumed responsibility for all IT projects in the state, establishing a central project management office to ensure that consistent project intake, reporting and project management methodologies were being applied across the executive branch.

- The new Enterprise Program Management Office (EPMO) at MN.IT provides the governor with a formal review and offers recommendations/evaluations of state agency requests for IT-related project funding, as part of the governor's biennial budget process. This evaluation looks at whether the project's IT budget is accurate and sufficient, whether the project fits the State's strategic direction, architecture and/or whether the project can strategically tie in with other projects in order to leverage economies of scale.

- MN.IT has an established IT governance framework in place with the following committees:
  - o IT Strategic Planning
  - o Enterprise Architecture
  - o Information Security and Risk Management
  - o Enterprise Project and Portfolio Standards
  - o T Project and Portfolio Management Oversight
  - o Geospatial Technology
  - o Technology Accessibility Advisory

Strategy 12: Reduce complexity of IT purchasing

- All state IT procurement is now centrally-managed within MN.IT Services, allowing new investments to be scrutinized for enterprise compatibility, redundancy and reusability. This process is already yielding substantial savings and cost avoidance in agency IT budgets.

- MN.IT's Buy.IT program negotiates enterprise IT licenses in order to fast-track the provisioning process and to negotiate volume discounts.

Strategy 13: Core enterprise security functions

- MN.IT is in the process of reorganizing its security functions into enterprise services and "lines-of-business" services to maximize the limited security resources available. In addition, MN.IT has centralized the management of the State's monitoring and vulnerability management tools so they can be used by all agencies.

- An enterprise security awareness and training program has been established to deliver online training on security best practices to all state employees. The goal is to lessen the number of security incidents and maintain compliance with federal and state standards.

- The State has established an enterprise compliance team, processes and controls that works to ensure compliance with PCI and other state and federal requirements.

Strategy 14: Enterprise-wide information security processes and tools for situational awareness

- Enterprise intrusion prevention systems are in place at strategic locations within the state data centers.

Strategy 15: Security shared processes

- The State has adopted NIST as the framework for the Enterprise Security Program. Other frameworks and industry standards, such as CIS, OWASP and ISO are also leveraged.

- Policy and standards are in place at an enterprise level for cybersecurity. Some agency-specific policies and standards are in place to address agency-specific privacy issues.

- The State has established data encryption policies. Enforcement of data encryption policies is currently handled via agency-specific automated or manual processes. Centralized management is in process.

- The State has established anti-virus and endpoint control policies which are implemented within each agency. Centralized management of endpoints is a tactical initiative that is underway.

- The State has established patch management standards. Agency-based MN.IT offices are responsible for server patch management. Centralized patch management processes will be leveraged as agency servers are consolidated into the enterprise Managed Hosting service. This is a current tactical initiative that is underway.

- The State has vendor security assurance processes in place at an enterprise level to evaluate third party providers. This includes hooks into the procurement process and inclusion of contract security language.

- The State has established standards around identify and access management and SSO. Implementation to address policy is currently handled via agency-specific processes. Centralized identify and access management solutions are in the process of being consolidated.

Conclusion

The State of Minnesota's executive branch continues to make significant progress toward the goals and strategies outlined in the 2012 State of Minnesota IT Master Plan. Led and enabled by its newly consolidated IT organization, major organizational reform has occurred even as services to state agencies have continued uninterrupted. MN.IT Services is poised now to move more quickly towards the vision and aspirations in the Master Plan and build an IT organization capable of helping government re-invent itself through the innovative use of information technology.